

Application No. 10/596,000

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REMARKS/ARGUMENTS

Claims 20, 22-29, 31, and 33-36 are pending in this application. By this amendment, Applicant amends Claims 20 and 31

Applicant's counsel greatly appreciates the courtesies extended by the Examiner in the personal Interview of February 26, 2009. In the personal Interview, Applicant's counsel explained the benefits and advantages that are obtained by the present invention, and the differences between the present invention and the applied prior art (particularly, Park et al. and Oshio et al.). Applicant's counsel explained that the photolithography photosensitive paste of the present invention includes conductive powder having a content of about 60 to about 90 percent by weight of the photosensitive paste, and argued that neither Park et al. nor Oshio et al. teaches or suggests this feature.

The Examiner agreed that neither Park et al. nor Oshio et al. teaches or suggests the feature of a conductive powder having a content of about 60 to about 90 percent by weight of the photosensitive paste.

Accordingly, Applicant has amended Claims 20 and 31 to recite the features of "applying to a support a photosensitive paste including a conductive powder" wherein the conductive powder has a content of "about 60 to about 90 percent by weight of the photosensitive paste."

Claims 20, 22-24, 26, 27, 29, 31 and 33-35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Park et al. (U.S. 2002/0160313) in view of Frechet et al. (U.S. 5,648,196). Claims 25 and 36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Park et al. in view of Frechet et al. as applied to Claims 20 and 31, and in further view of Cray (U.S. 3,661,576). Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Park et al. in view of Frechet et al. as applied to Claims 20 and 31, and in further view of Iguchi (U.S. 6,197,480). Claims 20, 22-24, 29, 31 and 33-35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Oshio et al. (U.S. 2002/0164542). Applicant respectfully traverses the rejections

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of Claims 20, 22-29, 31 and 33-36.

Claim 20 has been amended to recite:

A method for forming a thick film pattern, comprising the steps of:
applying to a support a photosensitive paste including a conductive powder, a photosensitive monomer, a photopolymerization initiator, and a polymer, wherein a ratio of the photosensitive monomer to a total amount of the photosensitive monomer and the polymer satisfies the condition represented by the following Formula:

$$\frac{\text{photosensitive monomer}}{(\text{photosensitive monomer} + \text{polymer})} \geq 0.86,$$

so as to form a photosensitive paste film;

subjecting the photosensitive paste film to an exposure treatment;

and

developing the photosensitive paste film subjected to the exposure treatment so as to form a thick film pattern; wherein

the contents of the conductive powder, the photosensitive monomer, and the photopolymerization initiator constituting the photosensitive paste are within the following ranges:

conductive powder: about 60 to about 90 percent by weight of the photosensitive paste;

photosensitive monomer: about 5 to about 39 percent by weight of the photosensitive paste; and

photopolymerization initiator: about 1 to about 10 percent by weight of the photosensitive paste. (emphasis added)

Applicant's Claim 31 recites features that are similar to the features recited in Applicant's Claim 20, including the above-emphasized features.

With the unique combination and arrangement of features recited in Applicant's Claims 20 and 31, including the features of "applying to a support a photosensitive paste including a conductive powder" wherein the conductive powder has a content of "about 60 to about 90 percent by weight of the photosensitive paste," Applicant has been able to provide a method for forming a thick film pattern, the method being capable of efficiently forming via photolithography a thick film pattern having a large thickness and exhibiting high dimension precision and high shape precision (see, for example, the paragraph bridging pages 2 and 3 of the Substitute Specification).

The Examiner alleged that Park et al. teaches all of the features recited in Applicant's Claims 20 and 31, except for the amount of photopolymerization initiator in the range recited in Claims 20 and 31. Particularly, the Examiner alleged that paragraph [0025] of Park et al. teaches "an inorganic fluorescent powder which includes metals."

As noted above, Applicant's Claims 20 and 31 have been amended to recite the features of "applying to a support a photosensitive paste including a conductive powder" wherein the conductive powder has a content of "about 60 to about 90 percent by weight of the photosensitive paste." Support for these features is found, for example, in the third full paragraph on page 17 of the Substitute Specification.

As acknowledged by the Examiner in the personal Interview of February 26, 2009, Park et al. teaches an inorganic fluorescent powder which includes some small percentage of metallic elements, and certainly fails to teach or suggest the features of "applying to a support a photosensitive paste including a conductive powder" wherein the conductive powder has a content of "about 60 to about 90 percent by weight of the photosensitive paste" as recited in Applicant's Claims 20 and 31.

The Examiner also alleged that Oshio et al. teaches an inorganic powder, wherein the powder may be powdered metal, such as iron, nickel, palladium, tungsten, copper, aluminum, silver, gold, and platinum, and that the teaching of Oshio et al. would motivate one of ordinary skill in the art to optimize the contents of the paste as recited in Applicant's Claims 20 and 31.

As noted above, Applicant's Claims 20 and 31 have been amended to recite the features of "applying to a support a photosensitive paste including a conductive powder" wherein the conductive powder includes a content of "about 60 to about 90 percent by weight of the photosensitive paste."

As acknowledged by the Examiner in the personal Interview of February 26, 2009, Oshio et al. teaches an inorganic powder for **an insulating paste**, wherein the powder may include some small amount of powdered metal. However, the inorganic

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powder of Oshio et al. clearly cannot include a conductive powder that is about 60 to about 90 percent by weight of the insulating paste. If a conductive powder of Oshio et al. were included within this range, then the paste of Oshio et al. would no longer be suitable for its intended purpose of providing insulation. Instead, the paste of Oshio et al. would be conductive.

The Examiner is reminded that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) and MPEP § 2143.01.

Thus, Oshio et al. certainly fails to teach or suggest the features of “applying to a support a photosensitive paste including a conductive powder” wherein the conductive powder has a content of “about 60 to about 90 percent by weight of the photosensitive paste” as recited in Applicant’s Claims 20 and 31.

The Examiner relied upon Frechet et al. to allegedly cure deficiencies of Park et al. However, Frechet et al. fails to teach or suggest the features of “applying to a support a photosensitive paste including a conductive powder” wherein the conductive powder includes a content of “about 60 to about 90 percent by weight of the photosensitive paste” as recited in Applicant’s Claims 20 and 31. Thus, Frechet et al. clearly fails to cure the deficiencies of Park et al. described above.

Accordingly, Applicant respectfully submits that Park et al., Frechet et al., and Oshio et al., applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant’s Claims 20 and 31.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 20 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Park et al. in view of Frechet et al., and the rejection of Claims 20 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Oshio et al.

The Examiner relied upon Cray and Iguchi to allegedly cure deficiencies of Park et al. and Frechet et al. However, Cray and Iguchi to teach or suggest the features of

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“applying to a support a photosensitive paste including a conductive powder” wherein the conductive powder includes a content of “about 60 to about 90 percent by weight of the photosensitive paste” as recited in Applicant’s Claims 20 and 31. Thus, Cray and Iguchi clearly fail to cure the deficiencies of Park et al. and Frechet et al. described above.

Accordingly, Applicant respectfully submits that Park et al., Frechet et al., Oshio et al., Cray, and Iguchi, applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant’s Claims 20 and 31.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claims 20 and 31 allowable. Claims 22-29 and 33-36 depend upon Claims 20 and 31, and are therefore allowable for at least the reasons that Claims 20 and 31 are allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicant petitions the Commissioner for a Three-Month Extension of Time, extending to April 10, 2009, the period for response to the Office Action dated October 10, 2008.

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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Dated: March 31, 2009

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